DEPARTMENT OF THE INTERIOR

Fish and Wildlife Service

50 CFR Part 17

RIN 1018-AB38

Endangered and Threatened Wildlife and Plants; Proposed Endangered Status for the Cahaba Shiner (Notropis cahabae)

AGENCY: Fish and Wildlife Service, Interior.

ACTION: Proposed rule.

SUMMARY: The Service proposes to list the Cahaba shiner (*Notropis cahabae*) as an endangered species. The Cahaba shiner is found only in Alabama in about 60 miles (formerly 76 miles) of the Cahaba River in Perry, Bibb and Shelby Counties. The Cahaba shiner is vulnerable to adverse habitat alteration from residential, industrial, and commercial development because of its restricted range and occurrence in small, scattered populations. This proposal, if

made final, would implement protection porvided by the Endangered Species Act of 1973 (Act), as amended, for the Cahaba shiner. The Service requests comments and data from the public on this proposal.

DATES: Comments from all interested parties must be received by May 18, 1990. Public hearing requests must be received by May 3, 1990.

ADDRESSES: Comments and materials concerning this proposal should be sent to the Jackson Field Office, U.S. Fish and Wildlife Service, Jackson Mall Office Center, Suite 316, 300 Woodrow Wilson Avenue, Jackson, Mississippi 39213. Comments and materials received will be available for public inspection, by appointment, during normal business hours at the above address.

FOR FURTHER INFORMATION CONTACT: Mr. James H. Stewart at the above address (601/965–4900 or FTS 490–4900).

SUPPLEMENTARY INFORMATION: .

Background

The Cahaba shiner (*Notropis cahabae*) is a small delicate bodied, silvery colored shiner about 2.5 inches (6.35 centimeters) long with a peach colored narrow stripe over the dark lateral stripe. The species was decribed in 1989 (Mayden and Kuhajda 1989). The Cahaba shiner differs from the mimic shiner (*N. volucellus*) (a closely related species) by a lateral stripe that does not expand before the causal spot, the absence of a predorsal dark blotch, the dorsal daudal peduncle scales are uniformly dark and pigmented and predorsal scales broadly outlined and diffuse (Mayden and Kuhadjda 1989). Its validity as a distinct species has been documented by Dr. John S. Ramsey in a letter to the Director of the Fish and Wildlife Service dated March 2, 1978. Species status was confirmed by Dr. W. Mike Howell and Dr. Robert A. Stiles of Samford University in a letter to the Director dated March 3, 1978.

The Cahaba shiner has been collected in Alabama in about 76 miles (121 km) of the Cahaba River from 3 miles (4.8 km) northeast of Heiberger in Perry County to Highway 52 bridge near Helena in Shelby County (Ramsey 1982, Pierson *et al.* 1989a). Ramsey (1982) speculates that the Cahaba shiner had a wider historical distribution, that possibly included the Coosa River. The present known range of about 60 miles (96 km) extends from 3 miles (4.8 km) northeast of Heiberger (Pierson *et al.* 1989a) to 3.75 miles (2.34 km) above Booth Ford (Howell *et al.* 1982). This range reduction of over 20 percent occurred between 1969 and 1977 (Ramsey 1982).

The habitat of the Cahaba shiner appears to be large shoal areas of the main channel of the Cahaba River. The species is found in the quieter waters less than 1.64 feet (o.5 meters) deep just below swift riffle areas (Howell *et al.* 1982). The Cahaba shiner seems to prefer patches of sandy substrate at the edge of or scattered throughout gravel beds or downstream of larger rocks and boulders. Many different types of habitats have been surveyed by ichthyologists to identify Cahaba shiner habitat. Ramsey (1982) searched large trubutaries of the Cahaba River and small rivers of the upper Mobile River system. Howell *et al.* (1982) stated that the Cahaba shiner did not occupy deep water habitats or any other sites other than that of large, shallow shoals. The Cahaba shiner is found in streams with a stable riparian zone and water quality parameters of 11° to 29° C, 5 to 10 milligrams/liter dissolved oxygen, 7.2 to 8.9 pH, and 4 to 375 Jackson Turbidity Units. It probably requires a river with sufficient small crustaceans, insect larvae, and algae for food, similar to its close relative, the mimic shiner (Gilbert and Burgess 1980).

The Cahaba shiner seems consistent with other fish in the mimic shiner group, spawning much later than do other North American cyprinids. They appear to spawn from late May through June and seem to have a more limited spawning period than do many fish which reach a rather small adult size. Pre-spawning aggregations have been observed at the tail of a long pool, in a moderate current at 1.2 to 2.0 feet (0.36 to 0.61 meters) depth, just before the current quickened at the head of the main riffle (Ramsey 1982).

Of 56 collection records from 1958 through 1985, 22 records were collections of single specimens and 30 other records were collections of less than 15 specimens. These few collections resulted from at least 260 collections of 46,000 specimens of many different fish using nine different techniques over a 27-year period (Howell *et al.* 1982; Ramsey 1982; Stiles 1978; Howell personal communication 1982; Pierson *in litt.* 1984; Stiles personal communication 1985). In addition, Ramsey (1982) used six associates of the Cahaba shiner as indicator species to identify collections for examination from over nine river systems in at least seven museums. No Cahaba shiners were found in any of these collections.

The limited range, scattered populations, and low numbers of the Cahaba shiner have been known since its discovery (Miller 1972, Ramsey *et al.* 1972, Ramsey 1976, Stiles 1978, Howell *et al.* 1982, Ramsey 1982, Ramsey 1986). O'Neil (1983) and the Environmental Impact Statement for the Cahaba River Wastewater Facilities, Jefferson, Shelby, and St. Clair Counties, Alabama (U.S. Environmental Protection Agency 1979) identified past, present, and future water quality problems in the Cahaba River. Water quality impacts have apparently extirpated the blue shiner (*N. caeruleus*) from the Cahaba River (Pierson and Krotzer 1987) and reduced the historic range of the Cahaba shiner by over 20 percent. The Cahaba shiner appears to have specialized habitat requirements and is vulnerable to adverse changes in its environment.

A proposal to list the Cahaba shiner as endangered was published in the **Federal Register** on November 29, 1977 (42 FR 60765). A notice that extended the comment period and provided a date for a public hearing was published on February 6, 1978 (43 FR 4872). Following the public hearing on March 15, 1978, the Service published a critical habitat correction and again extended the comment period on April 7, 1978 (43 FR 14697). The 1978 amendments to the Act required the withdrawal of any rule that had been previously proposed and had not been finalized within one year of the amendments' enactment. In accordance with the amendments, the still pending proposal to list the Cahaba shiner was withdrawn, effective November 29, 1979, and announced in the **Federal Register** on January 24, 1980 (45 FR 5782). Among new information that has been received since the proposal was withdrawn are two studies contracted by the Service. Dr. Mike Howell (Howell et al. 1982) was contracted to survey the Cahaba River for this species from Booth Ford to Trussville. The Alabama Geological Survey, under contract, conducted an historical water quality analysis of the Cahaba River above Centreville (O'Neil 1983). Other data received since the proposal are status reports by Ramsey (1982), Stiles (1978) and Pierson *et al.* (1989a, 1989b).

A petition dated January 22, 1990, was received by the Service from Mr. Ned Mudd, Jr., requesting that the Service protect the Cahaba shiner as an endangered species and also designate critical habitat. However, the petition was not accepted since it represented a request for an action on which the Service had in essence already reached a decision—a decision that is reflected in the content of the current proposed rule.

Summary of Factors Affecting the Species

Section 4(a)(1) of the Endangered Species Act (16 U.S.C. 1531 *et seq.*) and

regulations (50 CFR part 424) promulgated to implement the listing provisions of the Act set forth the procedures for adding species to the Federal Lists. A species may be determined to be an endangered or threatened species due to one or more of the five factors described in section 4(a)(1). These factors and their application to the Cahaba shiner (*Notropis cahabae*) are as follows:

A. *The present or threatened destruction, modification or curtailment of its habitat or range.* Degradation of water quality in the Cahaba River from residential and industrial sewage effluents, construction activities, mining, forestry, agriculture, and other non-point sources could have an adverse effect on this species.

Howell *et al.*, (1982) during their study of the upper Cahaba River, made the following observations:

1. Fall and winter readings of nitrate nitrogen and summer orthophosphate values increased dramatically at the U.S. Highway 31 site approximately 0.75 river miles below the Cahaba Sewage Treatment Plant. The effects of the enrichment are evident for one or two miles below the plant.

2. The Patton Creek Sewage Treatment Plant contributes high amounts of blue-green algae and nutrients, creating a definite oxygen sag approximately 0.5 river miles below the mouth of Patton Creek. The nutrients from this source may affect the river as far as the mouth of Buck Creek at Helena.

3. Limestone quarries on Buck Creek may account for increased pH readings at five collecting stations on the Cahaba River.

4. There has been considerable strip-mining in the area of Piney Woods Creek and Booth Ford resulting in excessive siltation of the Creek. This is undoubtedly a major source of silt for the Cahaba River during periods of rain.

5. Previous populations have been seriously impacted by urbanization, sewage pollution, and strip-mining activities in the upper Cahaba River basin.

Ramsey (1982), in his study of the Cahaba River and in a letter dated March 13, 1978, recorded his observation of the appearance and spread of substrate blue-green algae at several localities since he began collecting on the Cahaba River in 1962. One location in particular, just below the Shelby County Highway 52 bridge (river mile 127.1), has been adversely impacted by a diminution of riverweed, apparently displaced by a substantial growth of blue-green algae on much of the rock and rubble substrate, resulting in the extirpation of Cahaba shiners, goldline darters, and blue-shiners since 1969. Eutrophication effects can be magnified in still pools during low flows and high temperatures when dissolved oxygen drops to low levels. Virtually all of the water in the Cahaba River below the Cahaba Sewage Treatment Plant during low flows consists of treated sewage effluent until augmented by tributaries farther downstream.

Siltation from construction activities, agriculture, forestry, and strip-mining can have an adverse effect on water quality. Urban runoff and siltation have apparently extirpated the blue shiner from the Cahaba River (Howell *et al.* 1982, Ramsey 1982, Pierson and Krotzer 1987, Pierson *et al.* 1989a). Recent collections at Booth Ford have shown a significant decrease in species diversity and numbers of specimens, apparently the result of coal silt from strip-mining (Stiles 1978).

Because of the number of sewage treatment plants within the Cahaba River system, chlorination could have an adverse impact, especially on the Cahaba shiner. The Cahaba shiner, a member of the mimic shiner group, is more sensitive to chlorine than other *Notropis* species (Ramsey 1982).

Adverse, poor, or degraded water quality relative to previous sample results has been documented for dissolved oxygen, chloride, nitrogen, phosphorus, cadmium, iron, mercury, nickel, strontium, zinc, sediment metal concentrations, and wastewater treatment plant effluents (O'Neil 1983). There is also evidence of these water quality indications worsening.

The Environmental Impact Statement for the Cahaba River Wastewater Facilities, Jefferson, Shelby, and St. Clair Counties, Alabama, (U.S. Environmental Protection Agency 1979) identifies and projects water quality problems in the Cahaba River as follows:

1. Relatively high levels of total inorganic nitrogen and total phosphorus are found at several locations throughout the basin (p. III–2).

2. Nonpoint sources of pollution may also be a source of nutrient loadings (p. III–2).

3. Much algal biomass, increased production, high diurnal oxygen fluctutations, and decreased oxygen occur at lower water depths, particularly upstream of Cahaba Wastewater Treatment Plant and behind lowhead dams (p. III–3).

4. Nuisance bacterial slime communities and decreased diversity of benthic invertebrates have been observed throughout the basin (p. III–3).

5. Population growth in the study area is projected to increase from 92,780 in 1975 to 138,300 in 2000 (p. III–3).

6. Nineteen pollution sources are identified in the study area (p. AI–24).

7. There are nine documented fish kills in the Cahaba River from 1965 to 1973 (Table 1–2, P. AI–26).

8. There is insufficient waterflow to handle sewage needs. Alternative water supplies brought from other basins to the Cahaba River could have an adverse effect on the biota (p. AI–74 and 75).

9. Four municipal wastewater treatment plants (p. III–4, 5, and 6) and thirteen private wastewater treatment systems occur in the study area (p. III–5 and Table AI–28, p. AI–96 and 97).

10. There are 55 coal and iron surface mined areas, 22 deep mines, and 15 open pit mines and mine tailings identified in the EIS (Figure AI–9).

11. The influence on dissolved oxygen by the Cahaba River Wastewater Treatment Plant extends approximately 10 miles downstream from its discharge at river mile 138.7 (p. AII–47).

12. The habitat of the Cahaba shiner may be effected by nutrient loadings and residual chlorine from the Cahaba Wastewater Treatment Plant (p. AII–93 and 94).

13. Projections of future land use indicate an increase from 1975 to 2000 of 22 square miles of residential development and 4 square miles of industrial and commercial development (p. AII–138).

14. The potential for stormwater-related problems is significant in 19 of the 38 study area drainage basins identified in the EIS Appendices (p. AII–156).

A gas company has applied for a permit to discharge wastewater produced from methane gas wells. This discharge may be up to 6.3 million gallons per day and 5,000 ppm total dissolved solids (brine water). The daily average limit for chlorides is 230 milligrams per liter, based on the National Standard to prevent chronic toxicity in the receiving streams.

B. *Overutilization for commercial, recreational, scientific, or educational purposes.* According to Ramsey (1982), collecting is not considered to have a bearing on the Cahaba shiner's status.

C. *Disease or predation.* No adverse impacts from this factor are documented in the literature.

D. *The inadequacy of existing regulatory mechanisms.* Scientific Collectors Permits are required by the State of Alabama to collect Cahaba shiners for scientific purposes. However, they may be inadvertently taken for bait fish when seining for minnows.

E. *Other natural or manmade factors affecting its continued existence.* Approximately 700 specimens (one collection of 370) of the Cahaba shiner have been collected from 1958 through 1985 in 56 collections (Ramsey 1982; Howell *et al.* 1982; Howell, personal communications 1982; Stiles, personal communication 1985; Pierson, *in litt.*). Of these 56 collections, 22 were of single specimens and all but 4 of the remaining collections contained less than 15. These low numbers of specimens and few successful collection localities illustrate the species' low abundance despite intensive collection effort.

Ramsey (1982) used 9 different collecting techniques in a two-year effort to collect Cahaba shiners. He collected over 43,000 fish in 107 seine samples including only 11 Cahaba shiners in 10 samples at 3 localities. Indicator species were used to identify other streams to field check or review collection data for the occurrence of Cahaba shiners. He field checked the following streams using the respective indicator species: Cahaba River system-freckled darter; Hatchet Creek, a tributary of the Coosa River in Alabama-channel darter; and Sipsey Fork of the Black Warrior River-muscadine darter. Dr. Ramsey examined collections from the Coosawattee River in Georgia, containing the goldline darter, all collections from Alabama with the blue shiner, as well as the Conasauga River collections in Georgia and Tennessee. All specimens of the mimic shiner from the Mobile River system curated at Auburn, Cornell, Florida State and Tulane Universities, the Universities of Alabama and Tennessee, and the National Museum of Natural History were examined. Dr. Ramsey has examined thousands of mimic shiner specimens from the Cumberland, Tennessee, and lower Mississippi River basins, and other rivers of the eastern United States.

The low numbers, scattered populations, restricted range, and unusually limited spawning interval (Ramsey 1982) of the Cahaba shiner make this species especially susceptible to any natural or manmade factors that adversely affect it.

The Service has carefully assessed the best scientific and commercial information available regarding the past, present, and future threats faced by this species in determining to propose this rule. Based on this evaluation, the preferred action is to list the Cahaba shiner as endangered, defined under the Act as being in danger of extinction throughout all or a significant portion of its range. This preferred action is chosen due to the restricted range, scattered populations, low numbers, unusual biological traits, and water quality problems. Critical habitat is not being proposed as discussed below.

Critical Habitat

Section 4(a)(3) of the Act, as amended, requires that to the maximum extent prudent and determinable, the Secretary propose critical habitat at the time the species is proposed to be endangered or threatened. The Service finds that designation of critical habitat is not presently prudent for this species. All involved Federal and State agencies are aware of the existence of this species in the Cahaba River and the importance of protecting its habitat. Protection of this species' habitat will be addressed through the recovery process and through the section 7 jeopardy standard. Therefore, it would not now be prudent to determine critical habitat for the Cahaba shiner.

Available Conservation Measures

Conservation measures provided to species listed as endangered or threatened under the Endangered Species Act include recognition, recovery actions, requirements for Federal protection, and prohibitions against certain practices. Recognition through listing encourages and results in conservation actions by Federal, State, and private agencies, groups, and individuals. The Endangered Species Act provides for possible land acquisition and cooperation with the States and requires that recovery actions be carried out for all listed species. The protection required of Federal agencies and the prohibitions against taking and harm are discussed, in part, below.

Section 7(a) of the Act, as amended, requires Federal agencies to evaluate their actions with respect to any species that is proposed or listed as endangered or threatened and with respect to its critical habitat, if any is being designated. Regulations implementing this interagency cooperation provision of the Act are codified at 50 CFR part 402. Section 7(a)(4) requires Federal agencies to confer informally with the Service on any action that is likely to jeopardize the continued existence of a proposed species or result in destruction or adverse modification of proposed critical habitat. If a species is listed subsequently, section 7(a)(2) requires Federal agencies to ensure that activities they authorize, fund, or carry out are not likely to jeopardize the continued existence of such a species or to destroy or adversely modify its critical habitat. If a Federal action may affect a listed species or its critical habitat, the responsible Federal agency must enter into formal consultation with the Service.

The Act and implementing regulations found at 50 CFR 17.21 set forth a series of general prohibitions and exceptions that apply to all endangered wildlife. These prohibitions, in part, make it illegal for any person subject to the jurisdiction of the United States to take (includes harass, harm, pursue, hunt, shoot, wound, kill, trap, or collect; or to attempt any of these), import or export, ship in interstate commerce in the course of commercial activity, or sell or offer for sale in interstate or foreign commerce any listed species. It also is illegal to possess, sell, deliver, carry, transport, or shop any such wildlife that has been taken illegally. Certain exceptions apply to agents of the Service and State conservation agencies.

Permits may be issued to carry out otherwise prohibited activities involving endangered wildlife species under certain circumstances. Regulations governing permits are at 50 CFR 17.22 and 17.23. Such permits are available for specific purposes, to enhance the propagation or survival of the species, and/or for incidental take in connection with otherwise lawful activities.

Public Comments Solicited

The Service intends that any final action resulting from this proposal will be accurate and as effective as possible. Therefore, comments or suggestions from the public, other concerned governmental agencies, the scientific community, industry, or any other interested party concerning this proposed rule are hereby solicited. Comments particularly are sought concerning:

(1) Biological, commercial trade, or other relevant data concerning any threat (or lack thereof) to this species;

(2) The location of any additional populations of this species and the reasons why any habitat should or should not be determined to be critical habitat as provided by section 4 of the Act;

(3) Additional information concerning the range, distribution, and population size of this species; and

(4) Current or planned activities in the subject area and their possible impacts on this species.

Final promulgation of the regulations on this species will take into consideration the comments and any additional information received by the Service, and such communications may

lead to a final regulation that differs from this proposal.

The Endangered Species Act provides for a public hearing on this proposal, if requested. Requests must be received within 45 days of the date of publication of the proposal. Such requests must be made in writing and addressed to Field Supervisor (see ADDRESSES section).

National Environmental Policy Act

The Fish and Wildlife Service has determined that an Environmental Assessment, as defined under the authority of the National Environmental Policy Act of 1969, need not be prepared in connection with regulations adopted pursuant to section 4(a) of the Endangered Species Act of 1973, as amended. A notice outlining the Service's reasons for this determination was published in the **Federal Register** on October 25, 1983 (48 FR 49244).

References Cited

Gilbert, C.R., and G.H. Burgess. 1980. *Notropis volucellus* (Cope), mimic shiner. Page 322 *in* D.S. Lee *et al.*, eds., Atlas of North American Freshwater Fishes. NC State Mus. Nat. Hist., Raleigh, NC. i–x + 854 pp.

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Mayden, R.L., and B.R. Kuhajda. 1989. Systematics of *Notropis cahabae*, a new cyprinid fish endemic to the Cahaba River of the Mobile Basin. Bull. Alabama Mus. Nat. Hist. No. 9. 16 pp.

Miller, R.R. 1972. Threatened freshwater fishes of the United States. Trans. Amer. Fish. Soc. 101(2):239–252.

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Ramsey, J.S. 1986. Cahaba shiner, *Notropis* sp. cf. *volucellus*. Pages 2–3 *in* R.H. Mount, ed., Vertebrate animals of Alabama in need of special attention. AL Agr. Expt. Sta., Auburn Univ. 124 pp.

Ramsey, J.S., W.M. Howell, and H.T. Boschung, Jr. 1972. Rare and endangered fishes of Alabama, pages 57–66 *in* Rare and Endangered Vertebrates of Alabama.

Stiles, R.A. 1978. A report on the status of the goldline darter, *Percina aurolineata*, and the Cahaba shiner, *Notropis* sp., in the Cahaba River system of Alabama. Cahaba River Study Project. 6 pp. + Maps and Appendices.

U.S. Environmental Protection Agency. 1979. Final environmental impact statement for Cahaba River wastewater facilities Jefferson, Shelby, and St. Clair Counties, Alabama. 95 pp. + Transcript, Comments, Correspondence, and Appendices (1978).

Authors

The primary authors of this proposed rule are John J. Pulliam, III, and James H. Stewart (see ADDRESSES section).

List of Subjects in 50 CFR Part 17

Endangered and threatened species, Fish, Marine mammals, Plants (agriculture).

Proposed Regulations Promulgation

PART 17—[AMENDED]

Accordingly, it is hereby proposed to amend part 17, subchapter B of chapter I, title 50 of the Code of Federal Regulations, as set forth below:

1. The authority citation for part 17 continues to read as follows:

Authority: 16 U.S.C. 1361–1407; 16 U.S.C. 1531–1543; 16 U.S.C. 4201–4245; Pub. L. 99–625, 100 Stat. 3500, unless othewise noted.

2. It is proposed to amend § 17.11(h) by adding the following, in alphabetical order under "FISHES", to the List of Endangered and Threatened Wildlife.

§ 17.11 Endangered and threatened wildlife.

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(h) * * *

Species		Historic range	Vertebrate population where endangered or threatened	Status	When listed	Critical habitat	Special rules
Common name	Scientific name						
FISHES							
Shiner, Cahaba	*Notropis cahabae*	USA (AL)	Entire	E		NA	NA

Dated: March 1, 1990.

Richard N. Smith,

Acting Director, Fish and Wildlife Service.

[FR Doc. 90–6196 Filed 3–16–90; 8:45 am]

BILLING CODE 4310–55–M